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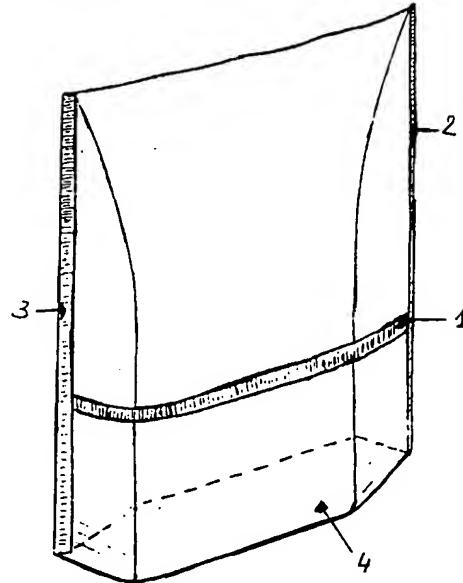
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(54) **Gusseted stand-up pouch and method of producing same.**

(57) The present invention is a stand-up pouch comprising dry or powdered product formed from a length of generally flat material, the longitudinal edges of said length being connected together by a longitudinal seal (1), and the opposite ends (2,3) and of the tube so formed being closed, wherein on one lateral side (5) only a portion of the plastic container adjacent each of the said ends is folded inwardly so as to form a gusset (4). According to the present invention, this pouch will stand on the gusset (4) when presented on the shelf. The present invention relates also to the method of making such a pouch.

Figure 3



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### Technical field

The present invention relates to a pouch of plastic material, of the type produced by welding and severing sheets or tubes of plastic material at spaced locations, and a method for making same. The present invention relates more particularly to a stand-up easy-pour refill pouch for dry or powdered product.

### Background of the invention

Many and various forms of stand-up plastic containers used as utility packages for receiving most dry, powdered or even granular commodities have been extensively described in the art as well as their fabrication methods.

Representative of the prior art are the plastic pouches disclosed in US-5 184 896 issued February 9, 1993 and entitled "Self-expanding flexible pouch including improved extensible stay to maximize opening". Said '896 patent discloses a plastic pouch having a bottom gusset attached to the inner surface of the sidewall panels. Also, well-known in the art are the stand-up plastic containers which provide the stand up capability merely by a bottom gusset sealed into a strong, sturdier and stable stand-up base. Representative of this prior art is the plastic bag disclosed in EP-0 334 242 entitled "Stand-up plastic bag and method of making same".

It is also known to form a plastic container by connecting together the longitudinal edges of a length of generally flat material to form a tube having a longitudinally extending seal, and by subsequently closing the ends of this tube to form the top and bottom of the plastic container. The ends of said container are usually closed by transverse seals, and opening of the package is achieved by tearing through one of these seals. It is also known to produce such plastic containers having two gussets located on each of their lateral sidewalls. Such plastic containers, without any gussets or with two gussets respectively located on each of the lateral sidewalls of said plastic container, stand on the their bottom transverse seals.

It is an object of the present invention to provide a plastic stand-up pouch. It is a further object of the present invention to provide stand-up pouches which allow a simpler and less costly method of making them. Indeed, the present invention allows to reduce the number of parts or of operations for the manufacturing of said stand-up pouch over the stand-up containers disclosed by the prior art. According to the present invention, these objects are met by providing a stable stand-up pouch which comprises only one gusseted side wall. Said stand-up pouch according to the present

invention stands on the gusset, when presented on the shelf.

Another advantage of the present invention is it withstands high pressures and violent shocks without danger of breaking.

Furthermore, the pouch of the present invention can be used to refill a package. This satisfies environmental protection considerations as said pouch can be rolled up after use thereby producing less rubbish.

### Summary of the invention

The present invention provides a stand-up pouch and a method of making the same in a manner to satisfy the aforementioned needs.

Referring to Figure 1 the present invention is a stand-up pouch comprising dry or powdered product, formed from a length of generally flat material, the longitudinal edges of said length being connected together by a longitudinal seal (1), and the opposite ends (2) and (3) of the tube so formed being closed, wherein on one lateral side (5) only a portion of the plastic container adjacent each of the said ends is folded inwardly so as to form a gusset (4). According to the present invention, this pouch will stand on the gusset when presented on the shelf.

The present invention also resides in the method for making a stand-up pouch comprising the steps of :

- supplying a film (10) of a generally flat material,
- feeding the film onto a tube (11) so as to make a tube of said film,
- sealing the overlapping edges of said film by a longitudinal seal bar (12),
- forming said gusset by tucking means (13) on one lateral side only,
- sealing said film by sealing means (14) so as to obtain a pouch which is closed on one of its opposite ends,
- filling said pouch by the filling head (11) with the dry or powdered product,
- sealing and cutting the filled pouch by cutting (15) and sealing means (14).

### Detailed description of the invention

In order to make the invention more readily understood, reference will now be made to the accompanying drawings, in which ;

Figure 1 is a perspective view of a pouch as formed on VFFS (Vertical Form Fill Seal) machine in accordance with the present invention.

Figure 2 is a perspective view of another pouch as formed on VFFS-machine in accordance with the present invention. Figure 2 shows the rela-

tive position of the gusset which is located on one side only.

Figure 3 is a perspective view illustrating the pouch turned 90° and standing on the gusset.

Figure 4 is a perspective view of the machine used in the method producing a series of plastic pouches according to the present invention.

Figures 1 and 2 illustrates a pouch constructed according to the present invention from a length of generally flat material, the longitudinal edges of the length having been sealed together. Said longitudinal seal (1) is located either on the front wall or back wall of said pouch and more preferably on the back wall. Consequently, the front wall of the stand-up pouch is free for printed advertising material. On only one of the lateral sidewalls (5), the two sides of the pouch adjacent its opposite ends (2) and (3) have been folded inwardly to form the gusset (4). The opposite ends of the pouch are closed respectively by a top cross seal (2) and by a bottom cross seal (3).

It will be noted that the finished pouch stand on the gusset. The opposite side of the gusset is a straight top.

Suitable material to be used herein can be a single or a multi-layered generally flat material. Although not limited thereto, the preferred construction of the film is a multi-layer lamination of a plastic/paper material or a multi-layer lamination/coextrusion of any plastic material available to the man skilled in the art, i.e. high or low density polyethylene (HDPE or LDPE) or polyethylene terephthalate (PET) having a thickness of 40 to 200 micrometers. Preferred multi-layered film have a first and second thermoplastic materials, said first material is translucent and constitutes the outside layer of the pouch whereas said second material on which the advertising messages are printed constitutes the inside layer. Most preferred as a outside layer is a low density polyethylene having a thickness of 30 micrometers. Most preferred as a inside layer is a high density polyethylene having a thickness of 100 micrometers.

This construction of the film is particularly well suited for a stand-up pouch for containing different types of concentrated and unconcentrated dry or powdered products such as, but not limited to automatic dishwasher detergents, laundry detergents, softeners and hard surface cleaners.

In a preferred embodiment of the present invention the straight top located on the opposite side of the gusset is provided with a printed line to indicate to the consumer how to cut the pouch such as to ease and control pouring to the appropriate refillable package.

Turning now to figure 4, the pouch according to the present invention is formed on a conventional Vertical Form Fill Seal (VFFS) machine. The

method for making the pouch of the present invention is a continuous process. A generally flat material (10) for forming the pouches is fed into the VFFS machine. This material preferably comprises weldable or heat-sealable polyethylene. Said material is carried to the forming tube (11) which is also the filling head. The free edges of the material are joined together and are sealed by a longitudinal seal bar (12) so as to form a tube. A tucking device (13) located on only one side as shown in figure 4 allows the formation of the lateral gusset, before said pouch is closed. The tube formed in this way is then sealed by sealing means (14) on one of its opposite ends so as to form a bottom cross seal (3). The pouch formed in this way can now be filled stepwise by the filling head (11). After that, a horizontal seal bar (14) makes end seals and the cut-off knife (15) separates the filled pouches. After filling and sealing the pouch is turned 90 degrees to stand on the gusset.

### Claims

1. A stand-up pouch comprising dry or powdered product, formed from a length of generally flat material, the longitudinal edges of said length being connected together by a longitudinal seal (1), and the opposite ends (2) and (3) of the tube so formed being also sealed characterized in that said pouch on one of its lateral sides (5) only comprises a portion adjacent each of the said ends which is folded inwardly so as to form a gusset (4), on which said pouch stands.
2. A method for making a stand-up pouch according to any of the preceding claims comprising the step of:
  - supplying a film (10) of a generally flat material,
  - feeding the film onto a tube (11) so as to make a tube of said film,
  - sealing the overlapping edges of said film by a longitudinal seal bar (12),
  - forming said gusset by tucking means (13) on one lateral side only,
  - sealing said film by sealing means (14) so as to obtain a pouch which is closed on one of its opposite ends,
  - filling said pouch by the filling head (11) with the dry or powdered product,
  - sealing and cutting the filled pouch by cutting (15) and sealing means (14).
3. A stand-up pouch according to claims 1 or 2 wherein the opposite side of the gusset is a straight top.
3. A stand-up pouch according to claim 3 wherein said straight top comprises opening means.
4. A stand-up pouch according to any of the preceding claims wherein the generally flat material

used is a multi-layered film with a first and second thermoplastic material, said first material is translucent and constitutes the outside layer of the pouch whereas said second material on which the advertising messages are printed constitutes the inside layer.

5. A stand-up pouch according to claim 4 wherein the multilayered material used is made of a high density polyethylene having a thickness of 100 microns as the inside layer and of a low density polyethylene having a thickness of 30 microns as the outside layer.

**Amended claims in accordance with Rule 86-(2) EPC.**

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material is translucent and constitutes the outside layer of the pouch whereas said second material on which the advertising messages are printed constitutes the inside layer.

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6. A stand-up pouch according to claim 4 wherein the multi-layered material used is made of a high density polyethylene having a thickness of 100 microns as the inside layer and of a low density polyethylene having a thickness of 30 microns as the outside layer.

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1. A stand-up pouch comprising dry or powdered product, formed from a length of generally flat material, the longitudinal edges of said length being connected together by a longitudinal seal (1), and the opposite ends (2) and (3) of the tube so formed being also sealed characterized in that said pouch on one of its lateral sides (5) only comprises a portion adjacent each of the said ends which is folded inwardly so as to form a gusset (4), on which said pouch stands.

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2. A method for making a stand-up pouch according to any of the preceding claims comprising the step of:

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- supplying a film (10) of a generally flat material,
- feeding the film onto a tube (11) so as to make a tube of said film,
- sealing the overlapping edges of said film by a longitudinal seal bar (12),
- forming said gusset by tucking means (13) on one lateral side only,
- sealing said film by sealing means (14) so as to obtain a pouch which is closed on one of its opposite ends,
- filling said pouch by the filling head (11) with the dry or powdered product,
- sealing and cutting the filled pouch by cutting (15) and sealing means (14).

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3. A stand-up pouch according to claims 1 or 2 wherein the opposite side of the gusset is a straight top.

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4. A stand-up pouch according to claim 3 wherein said straight top comprises opening means.

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5. A stand-up pouch according to any of the preceding claims wherein the generally flat material used is a multi-layered film with a first and second thermoplastic material, said first

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Figure 1

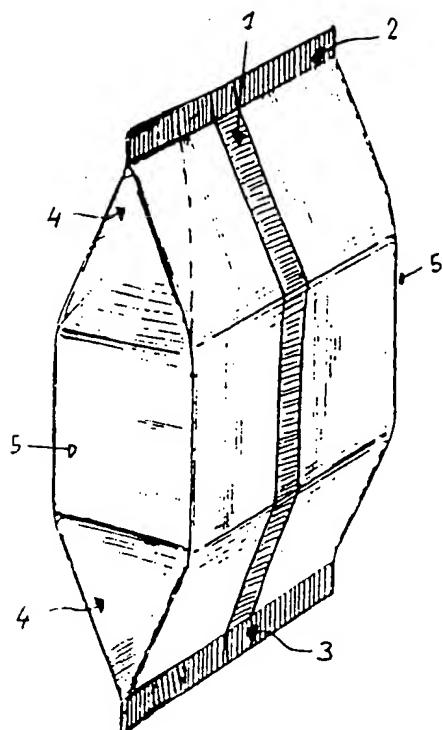


Figure 2

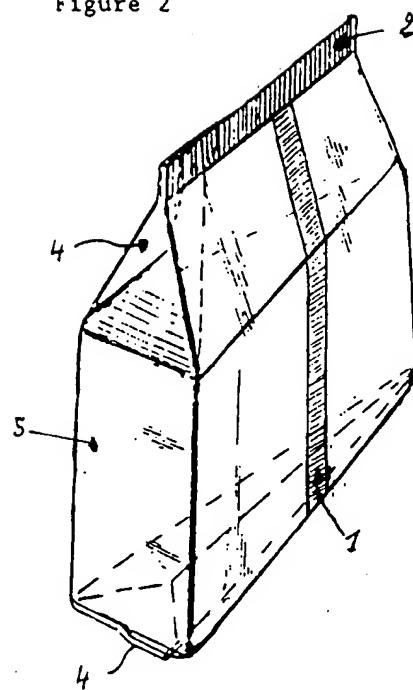
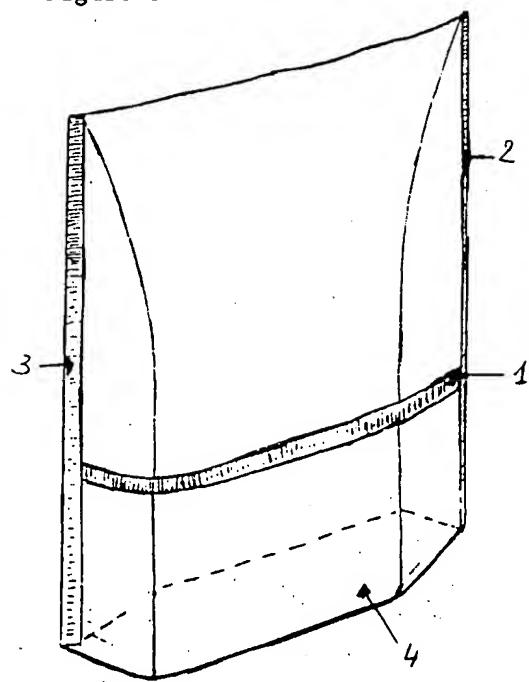


Figure 3



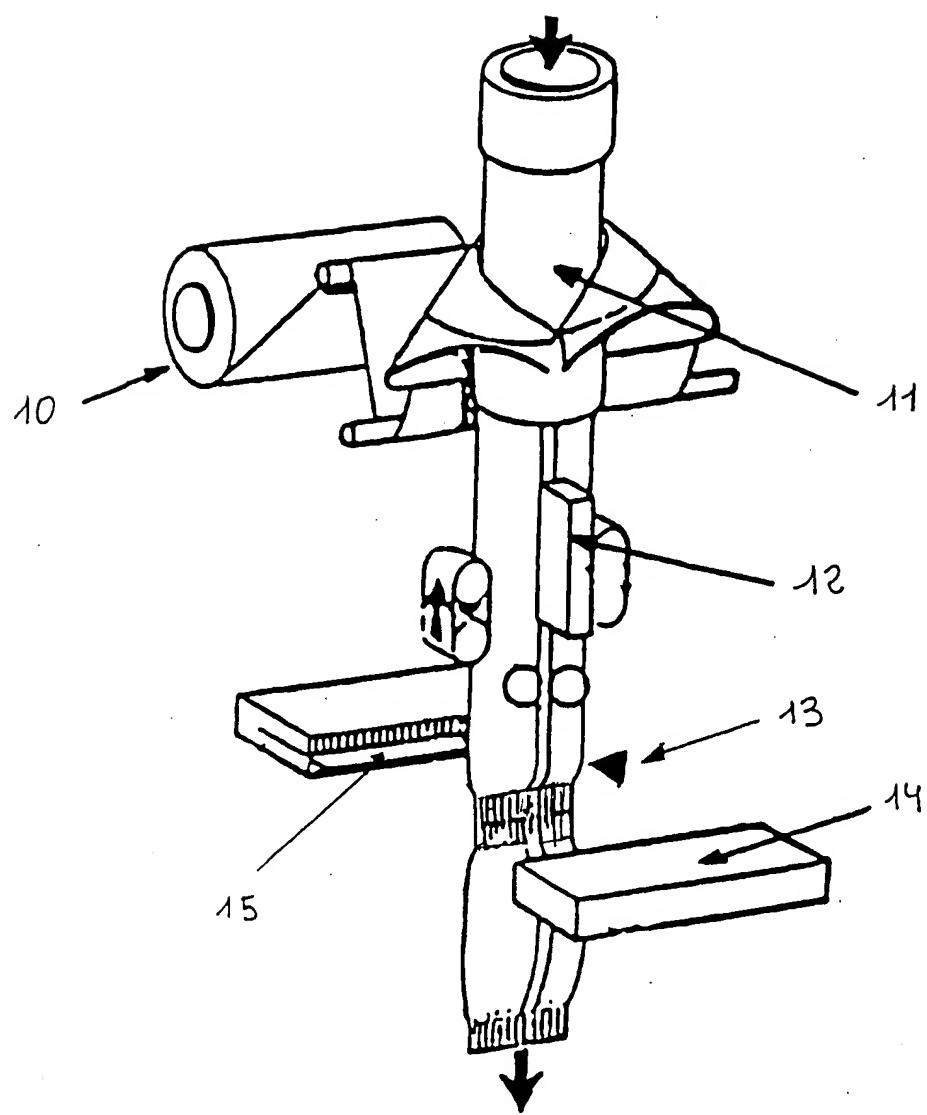


Figure 4



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## EUROPEAN SEARCH REPORT

Application Number

EP 93 87 0067

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
Y	US-A-3 659 775 (TRUMAN) * column 1, line 40 - column 2, line 57; figures 1-5 *	1-4	B65D30/16 B65D75/44 B65B9/20
Y	DE-A-1 761 259 (SPIESS & SOHN) * page 3, line 8 - line 17 * * page 8, line 1 - line 19; figure 1 *	1,3,4	
Y	DE-A-2 520 084 (ROVEMA) * page 9, line 3 - line 13; figure 1 *	2	
Y	US-A-3 741 778 (ROWE) * figures 1-4 *	3	
A	DE-A-3 926 728 (KODRON)	-----	
TECHNICAL FIELDS SEARCHED (Int. Cl.5)			
B65D B65B			
The present search report has been drawn up for all claims			
Place of search	Date of completion of the search	Examiner	
THE HAGUE	27 AUGUST 1993	BERRINGTON N.M.	
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	